

1/6

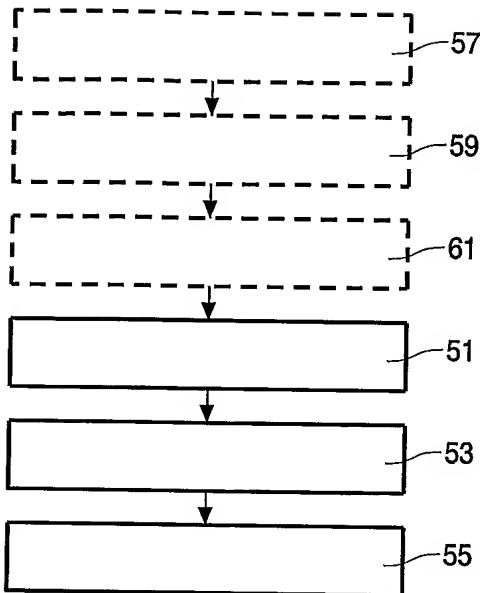


FIG. 1

```
<!DOCTYPE payInfo [
  <!ELEMENT payInfo (creditCard?, amount+)
  <!ELEMENT creditCard (number, name, address)
  <!ATTLIST creditCard limit CDATA #IMPLIED>
  <!ELEMENT number (#PCDATA)>
  <!ELEMENT name (#PCDATA)>
  <!ELEMENT address (#PCDATA)>
  <!ELEMENT amount (#PCDATA)>
]>
```

FIG. 2a

An XML DTD example-dtd1

```
<pay_Info>
<creditCard limit=1000>
  <number> 123456789 </number>
  <name> Alice </name>
  <address> Twente 7500 AE, Netherlands </address>
</creditCard>
<amount> 100.0 </amount>
</pay_Info>
```

FIG. 2b

An XML document example-doc1 that conforms to dtd1

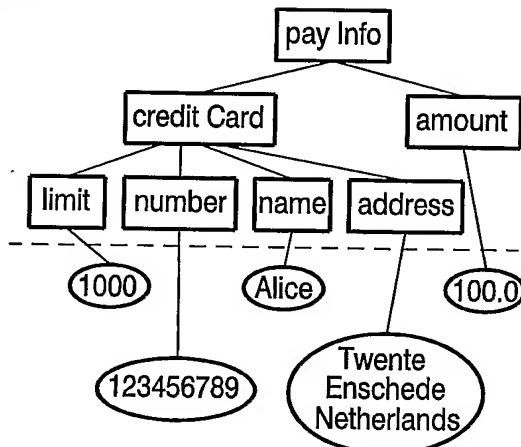


FIG. 2c

A graphical representation of the DOM tree structure for dtd 1 and doc 1

2/6

Path Length	Path
2	$P_1 = (\text{payInfo}/\text{creditCard}/\text{limit})$ $P_2 = (\text{payInfo}/\text{creditCard}/\text{number})$ $P_3 = (\text{payInfo}/\text{creditCard}/\text{name})$ $P_4 = (\text{payInfo}/\text{creditCard}/\text{address})$
1	$P_5 = (\text{payInfo}/\text{creditCard})$ $P_6 = (\text{payInfo}/\text{amount})$ $P_7 = (\text{creditCard}/\text{limit})$ $P_8 = (\text{creditCard}/\text{number})$ $P_9 = (\text{creditCard}/\text{name})$ $P_{10} = (\text{creditCard}/\text{address})$
0	$P_{11} = (\text{payInfo})$ $P_{12} = (\text{creditCard})$ $P_{13} = (\text{amount})$ $P_{14} = (\text{limit})$ $P_{15} = (\text{number})$ $P_{16} = (\text{name})$ $P_{17} = (\text{address})$

FIG. 3

3/6

Identifier of document that contains node(s) hashed into the bucket

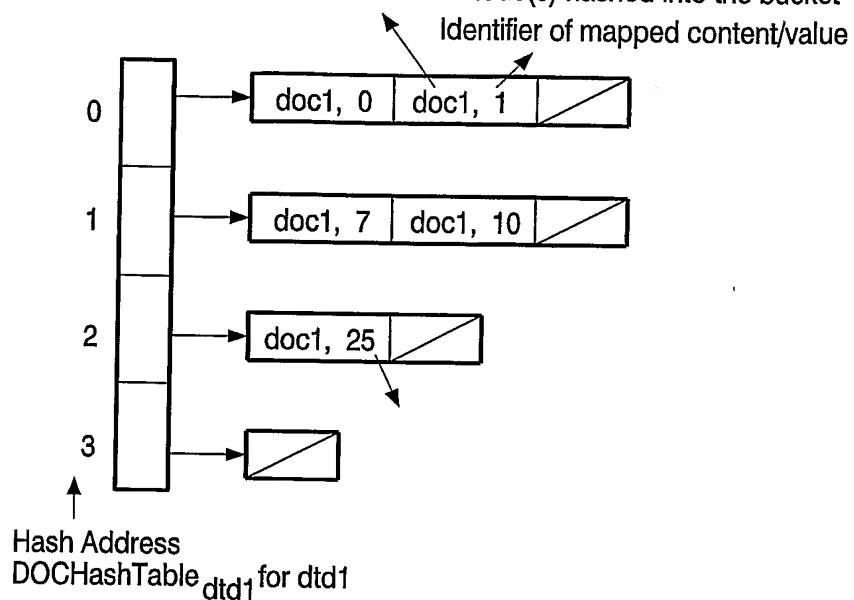
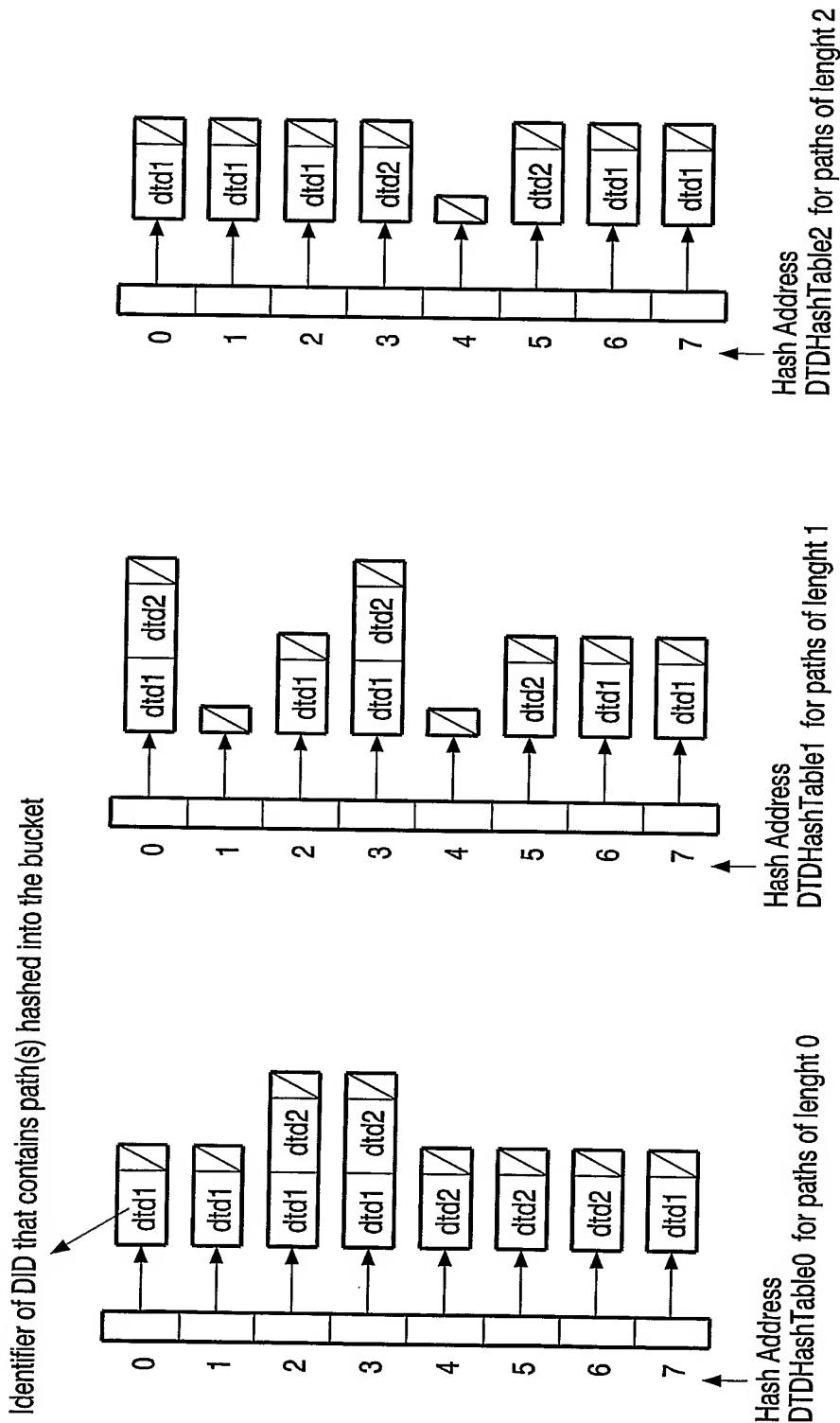


FIG. 4

(Element/Attribute c <sub>name</sub> , Content/Value c <sub>val</sub> )	HashFunc(c <sub>name</sub> )	MapFunc(c <sub>val</sub> )
c <sub>1</sub> = (limit, 1000)	0	1
C <sub>2</sub> = (number, 123456789)	1	10
C <sub>3</sub> = (name, "Alice")	0	0
C <sub>4</sub> = (address, "Twente, Enschede, Netherlands")	2	25
C <sub>5</sub> = (amount, 100.0)	1	7

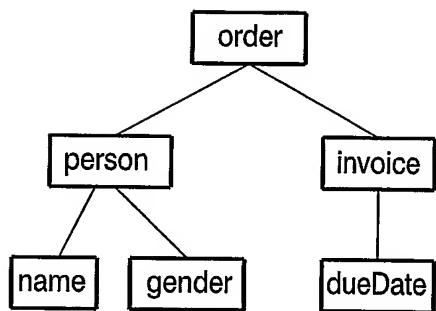
FIG. 5

4/6

**FIG. 6**

5/6

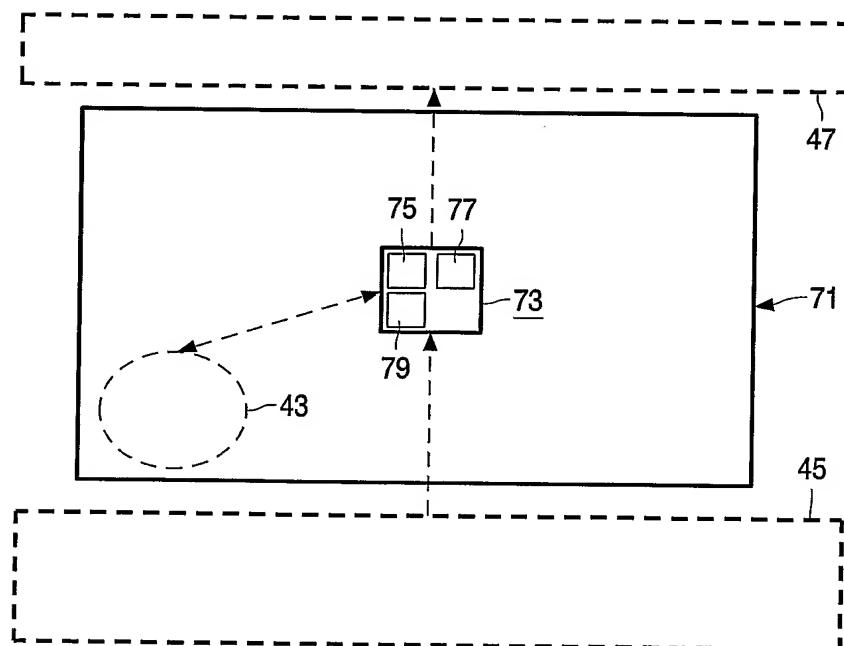
```
<!DOCTYPE payInfo [
  <!ELEMENT order (person, invoice)>
  <!ELEMENT person (name, gender)>
  <!ELEMENT name (#PCDATA)>
  <!ELEMENT gender (#PCDATA)>
  <!ELEMENT invoice (dueDate)>
  <!ELEMENT dueDate (#PCDATA)>
]>
```

**FIG. 7a**

Another DTD example-dtd2

**FIG. 7b**

A tree structure for dtd2

**FIG. 8**

6/6

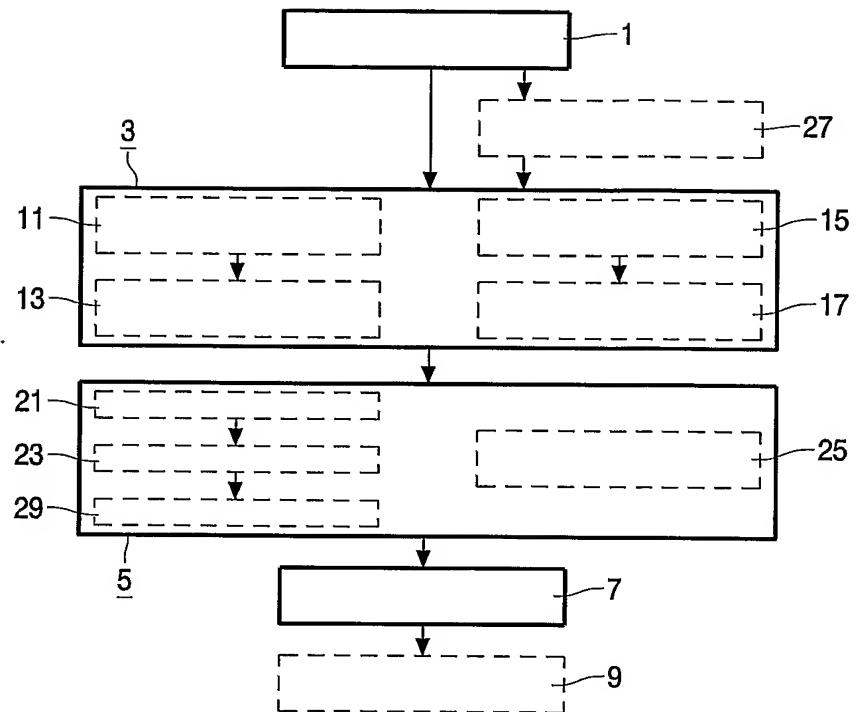


FIG. 9

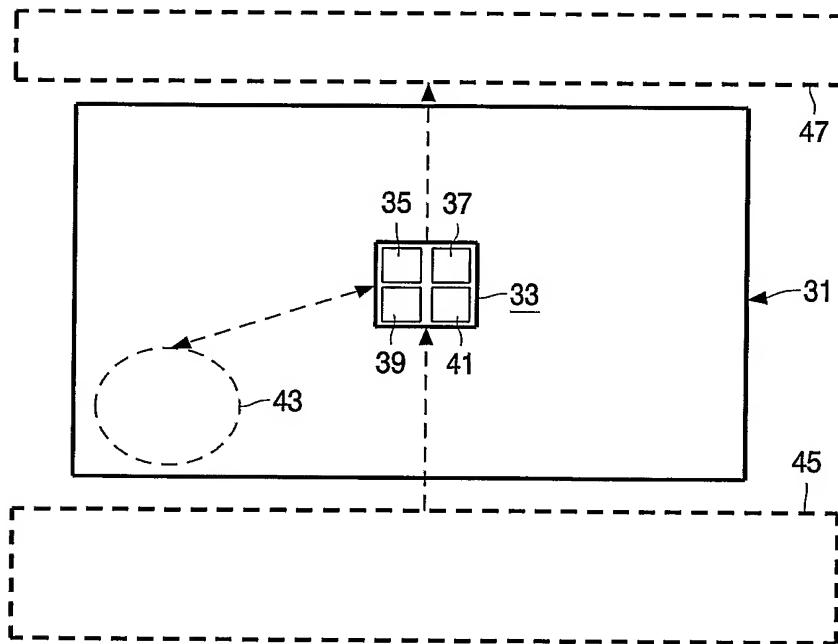


FIG. 10